

**REMARKS**

Claims 1-3 were examined and reported in the Office Action. Claims 1-3 are rejected. Claim 3 is canceled. Claim 1 is amended. Claims 1-2 remain. Applicant's amendment to claim 1 does not introduce new matter as the claim amendments are based on content in the specification, page 6 lines 2 to 3 and Fig. 1B.

Applicants request reconsideration of the application in view of the following remarks.

**I. 35 USC § 112, second paragraph**

It is asserted in the Office Action that claims 1-3 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention.

Applicant has amended claim 1, where x is now defined through the limitations "wherein x is a number between 0 and 1 and represents a composition ratio."

Accordingly, withdrawal of the 35 U.S.C. § 112, second paragraph rejection for claims 1-3 is respectfully requested.

**II. 35 U.S.C. §102**

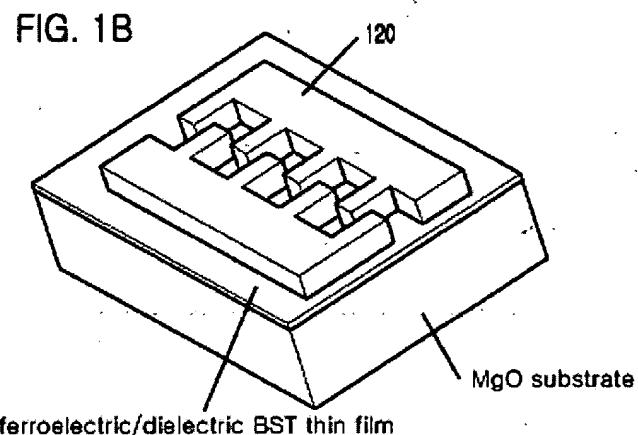
A. It is asserted in the Office Action that claims 1-3 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,739,563 issued to Kawakubo et al ("Kawakubo").

According to MPEP §2131, "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.' (Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)). 'The identical invention must be shown in as complete detail as is contained in the ... claim.' (Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)). The elements must be arranged

as required by the claim, but this is not an ipsissimis verbis test, i.e., identity of terminology is not required. (In re Bond, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990))."

Applicant's amended claim 1 contains the limitations of "[a] microwave tunable device, comprising: a MgO substrate; and a ferroelectric/dielectric  $(Ba_{1-x}, Sr_x) TiO_3$ , (BST) thin film of a (111) direction which is formed on the MgO substrate, wherein x is a number between 0 and 1 and represents a composition ratio."

Applicant's claimed invention includes a microwave tunable device has a structure as shown in Fig. 1B as follows:



Kawakubo discloses a ferroelectric type semiconductor device including an MgO layer as a substrate, Pt layer formed on the MgO layer and a BaSrTiO layer formed on the Pt layer. The Pt layer is used as a bottom electrode in the ferroelectric type semiconductor device. Applicant's claimed invention, however, does not include a Pt layer on the MgO layer. Moreover, Kawakubo does not disclose, teach or suggest "a MgO substrate; and a ferroelectric/dielectric  $(Ba_{1-x}, Sr_x) TiO_3$ , (BST) thin film of a (111) direction which is formed on the MgO substrate, wherein x is a number between 0 and 1 and represents a composition ratio."

Therefore, since Kawakubo does not disclose, teach or suggest all of Applicant's amended claim 1 limitations, Applicant respectfully asserts that a *prima facie* rejection under 35 U.S.C. §102(b) has not been adequately set forth relative to Kawakubo. Thus,

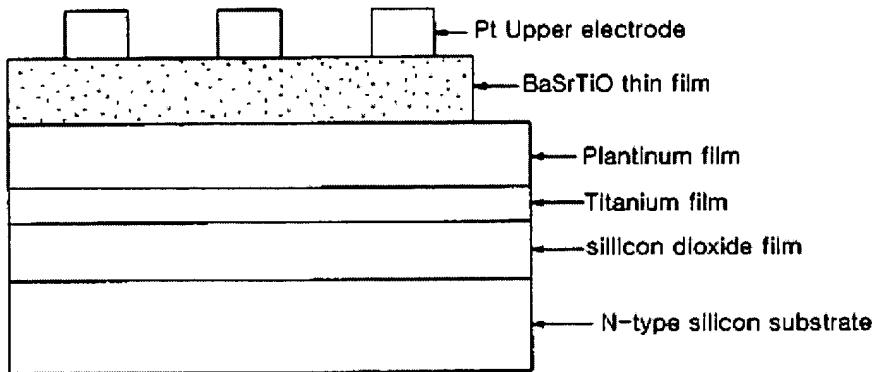
Applicant's amended claim 1 is not anticipated by Kawakubo. Additionally, the claim that directly depends from Applicant's amended claim 1, namely claim 2, is also not anticipated by Kawakubo for the same above reason.

Accordingly, withdrawal of the 35 U.S.C. §102(b) rejection for claims 1-3 is respectfully requested.

**B.** It is asserted in the Office Action that claims 1 and 2 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,593,495 issued to Masuda et al ("Masuda").

Masuda discloses a method for manufacturing a thin film of metal-oxide dielectric having a high dielectric constant, even at low temperature. The construction of the thin film is shown in Fig. 1 as follows.

**FIG. 1**



The BaSrTiO film is formed on the n-type silicon substrate. Between the BaSrTiO film and the n-type silicon substrate is a Platinum film, a titanium film and a silicon dioxide film formed on the n-type silicon substrate. The thin film of Masuda is distinguishable from Applicant's claimed invention since Applicant's claimed invention includes the MgO substrate without a platinum film, a titanium film and a silicon dioxide film. Moreover, Masuda does not disclose, teach or suggest "a MgO substrate; and a ferroelectric/dielectric  $(Ba_{1-x}, Sr_x) TiO_3$ , (BST) thin film of a (111) direction which is formed on the MgO substrate, wherein x is a number between 0 and 1 and represents a

composition ratio."

Therefore, since Masuda does not disclose, teach or suggest all of Applicant's amended claim 1 limitations, Applicant respectfully asserts that a *prima facie* rejection under 35 U.S.C. §102(b) has not been adequately set forth relative to Masuda. Thus, Applicant's amended claim 1 is not anticipated by Masuda. Additionally, the claim that directly depends from Applicant's amended claim 1, namely claim 2, is also not anticipated by Masuda for the same above reason.

Accordingly, withdrawal of the 35 U.S.C. §102(b) rejection for claims 1-2 is respectfully requested.

**C.** It is asserted in the Office Action that claims 1 and 2 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,312,819 issued to Jia et al ("Jia").

Jia discloses a thin film structure including a silicon substrate having a layer of silicon dioxide on a surface thereof and a layer of cubic oxide material deposited upon the layer of silicon dioxide by ion-beam-assisted-deposition, as shown in Fig. 4 as follows.

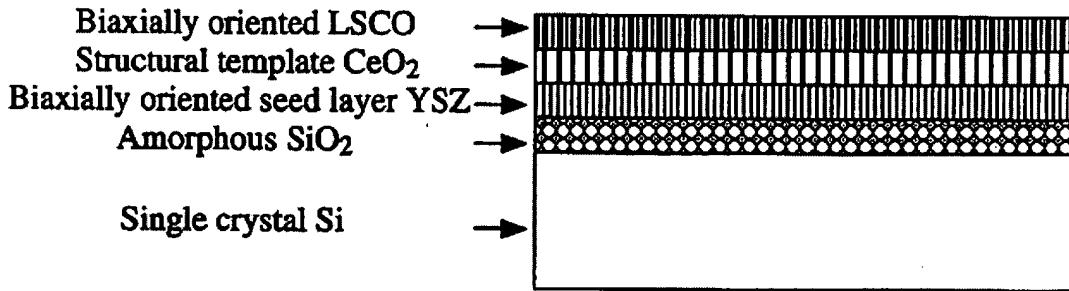


FIG. 4

The thin film of the Jia, however, does not include a MgO substrate. Moreover, Jia does not disclose, teach or suggest "a MgO substrate; and a ferroelectric/dielectric (Ba<sub>1-x</sub>, Sr<sub>x</sub>) TiO<sub>3</sub>, (BST) thin film of a (111) direction which is formed on the MgO substrate, wherein x is a number between 0 and 1 and represents a composition ratio."

Therefore, since Jia does not disclose, teach or suggest all of Applicant's amended claim 1 limitations, Applicant respectfully asserts that a *prima facie* rejection under 35 U.S.C. §102(b) has not been adequately set forth relative to Jia. Thus, Applicant's amended claim 1 is not anticipated by Jia. Additionally, the claim that directly depends from Applicant's amended claim 1, namely claim 2, is also not anticipated by Jia for the same above reason.

Accordingly, withdrawal of the 35 U.S.C. §102(b) rejection for claims 1-2 is respectfully requested.

D. It is asserted in the Office Action that claims 1 and 2 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,319,764 issued to Basceri et al ("Basceri").

Basceri discloses a method of forming haze-free BST films. In Basceri, the BST film is formed on partially on a Pt layer as a bottom electrode and partially on a base layer as shown in Fig. 2 as follows.

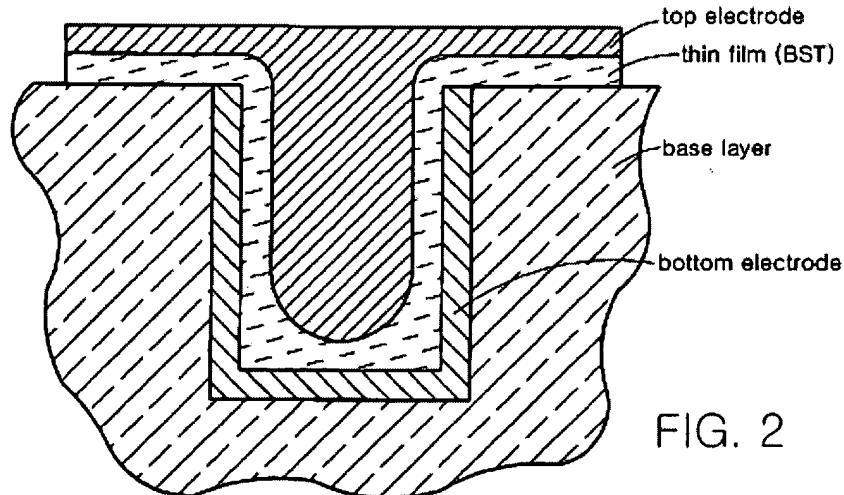


FIG. 2

Applicant's claimed invention is distinguishable from Basceri as Applicant's claimed invention does not form a BST layer on a Pt layer. Moreover, Basceri, does not teach, disclose or suggest "a MgO substrate; and a ferroelectric/dielectric (Ba<sub>1-x</sub>, Sr<sub>x</sub>)

TiO<sub>3</sub>x(BST) thin film of a (111) direction which is formed on the MgO substrate, wherein x is a number between 0 and 1 and represents a composition ratio."

Therefore, since Basceri does not disclose, teach or suggest all of Applicant's amended claim 1 limitations, Applicant respectfully asserts that a *prima facie* rejection under 35 U.S.C. §102(b) has not been adequately set forth relative to Basceri. Thus, Applicant's amended claim 1 is not anticipated by Basceri. Additionally, the claim that directly depends from Applicant's amended claim 1, namely claim 2, is also not anticipated by Basceri for the same above reason.

Accordingly, withdrawal of the 35 U.S.C. §102(b) rejection for claims 1-2 is respectfully requested.

**CONCLUSION**

In view of the foregoing, it is believed that all claims now pending, namely 1-2, patentably define the subject invention over the prior art of record and are in condition for allowance and such action is earnestly solicited at the earliest possible date.

If necessary, the Commissioner is hereby authorized in this, concurrent and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2666 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17, particularly extension of time fees. If a telephone interview would expedite the prosecution of this Application, the Examiner is invited to contact the undersigned at (310) 207-3800.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR, & ZAFMAN LLP

By: 

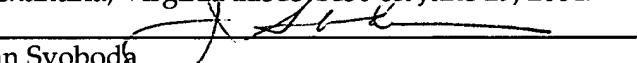
Steven Laut, Reg. No. 47,736

Dated: June 29, 2004

12400 Wilshire Boulevard  
Seventh Floor  
Los Angeles, California 90025  
(310) 207-3800

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail with sufficient postage in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P. O. Box 1450, Alexandria, Virginia 22313-1450 on June 29, 2004.

  
Jean Svoboda